

ADDITIONS TO THE FLORA OF WESTERN OREGON DURING 1922

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The outstanding feature of the past season's collecting in this region has been the number of new species afforded by the river-shores. It is not specially surprising to find species of the interior basin along the shores of the Columbia about Portland, brought down during the annual inundation; but it is much more difficult to explain the frequent occurrence of introduced species along the Willamette and its tributaries. These rivers rise in mountainous and sparsely-settled regions where the flora is strictly indigenous; and the foreign species occurring so abundantly along their shores are usually never found about the towns along the banks. Here at Salem we have a very distinct riparian flora, largely made up of introduced species which are never seen above high-water mark. The most frequent components are: *Saponaria officinalis* L., *Chenopodium Botrys* L., *C. ambrosioides* L., *Datura Stramonium* L., *D. Tatula* L., *Solanum nigrum* L. var. *villosum* L., *Aristida oligantha* Michx. and *Cyperus esculentus* L.; yet none of these species are found as weeds about the towns along the upper river. Most of these are found along the Santiam also, with the addition of *Aspris capillaris* (Host) Hitchc., *Lychnis alba* Mill., *Scleranthus annuus* L., *Chrysanthemum Parthenium* L. and *Cynoglossum officinale* L. The sand- and gravel-bars along these rivers seem botanically speaking to be a sort of extended ballast-ground, and the collector may feel assured of a surprise on almost every visit. The 28 species of the present list, all of which were growing spontaneously, verify the earlier prediction that a more careful study of our region would raise Piper & Beattie's total of 1617 species to at least 2000. These 28 bring the total now presented in these annual lists to 399. Added to the 1617 of the Flora of the Northwest Coast, the 2000 mark has been exceeded by 16 species. Nor is there any reason to suppose that another season will not result in still further additions. Species plainly introduced are marked * in the following list:

1. *Equisetum laevigatum* A. Br. In cultivated ground under fruit-trees in the Willamette River bottoms near Keizer school-house, four miles north of Salem. Determined by W. R. Maxon.

2. *Potamogeton pusillus* L. var. *tenuissimus* Mort. & Koch. In shallow water on the Polk County shore of the Willamette, opposite Sidney, Marion County. Has probably been taken for the species. Determined by C. A. Weatherby.

3. **Panicum capillare* L. On lawns and street-parking about Salem. The indigenous species formerly referred here is *P. barbipulvinatum* Nash; but our plant is plainly introduced, and well matches authentic specimens of *P. capillare*.

4. **Agrostis verticillata* Vill. In wet sand on the shore of the Columbia River on Hayden Island, Multnomah Co., opposite Vancouver, Wash. Piper and Beattie regard this as identical with *A. stolonifera* L.; but Hitchcock (U. S. Dept. Agr. Bull. 772: 127. 1920) has shown that two distinct species were confused by Linnaeus. The "creeping bent" of lawns about Salem should be regarded according to Hitchcock as a form of the true *A. stolonifera* rather than of *A. alba* L. (now *A. palustris* Huds.). This form is common along the shores of the Willamette, where it appears to be indigenous. Determined by Agnes Chase.

5. *Eragrostis lutescens* Scribn. With the last. A species indigenous to the Snake River basin of Washington and Idaho, but occasionally found along the Columbia. Determined by Agnes Chase.

6. **Eragrostis mexicana* (Lag.) Link. A single plant in a flower-bed on Market Street, Salem. Plainly introduced, as the native range is from southern Cal. southward into Mexico. Determined by Agnes Chase.

7. *Carex teneraeformis* Mackenzie. In dry rocky soil under trees on the southwest slope of Mt. Hood, at 5000 ft. alt. Reported by M. E. Peck from the mountains of southern Oregon. Determined by K. K. Mackenzie.

8. **Chenopodium carinatum* R. Br. Prostrate on the sand on Hayden Island. An Australian species that has been long known in Cal., and collected by the writer at two stations in Curry Co., Oregon in June, 1917.

9. **Chenopodium leptophyllum* (Moq.) Nutt. On parking in front of the Willamette University campus at Salem. Indigenous in southern Oregon. Determined by Bayard Long.

10. **Atriplex Gmelini* C. A. Mey. On the sandy shore of Hayden Island, associated with various other Chenopodiaceae. Determined by P. C. Standley.

11. **Phytolacca decandra* L. A single specimen associated with no. 9. Has been collected in southern Oregon by M. W. Gorman.

12. **Scleranthus annuus* L. On the gravelly shore of the North Santiam River at N. Santiam Station, Marion Co. Determined by M. E. Peck, who has collected it in Josephine and Curry Cos.

13. **Ranunculus acris* L. Well established in a meadow along a small stream one mile north of Brooks, Marion Co. Has also been reported from meadows along the Willamette River in Polk Co., where an apparent hybrid with the native *R. Bongardi* Greene has been collected by Peck.

14. **Ranunculus repens* L. var. *pleniflorus* Fernald. Occasional on roadsides and in waste ground about Salem. Determined by Bayard Long.

15. **Potentilla norvegica* L. On the shore of Hayden Island, in wet sand. The specimens, though numerous, are usually depauperate and rarely found in flower. Determined by C. A. Weatherby.

16. **Coronilla varia* L. Along a stone wall in the grounds of Sacred Heart Academy, Salem. Has been found as a ballast-plant at Linnton.

17. *Euphorbia maculata* L. On a gravel-bar in the Willamette River three miles north of Sidney. Not infrequent in southern Oregon. Determined by M. E. Peck.

18. **Viola arvensis* Murr. With no. 9, evidently imported in grass-seed.

19. **Viola tricolor* L. Common in cultivation, and frequently escaping to garden-borders and street-parking, where it completely reverts to the original wild form with small flowers.

20. **Hedera Helix* L. Very common in cultivation, and carried by the agency of birds to hedgerows and stream-banks about Salem.

21. *Allocarya ramosa* Piper. On muddy shores of the Willamette and Santiam Rivers. A very well-marked and distinct species. Determined by C. V. Piper.

22. **Verbascum phlomoides* L. In gravel on railroad-embankment at Chemawa, Marion Co. Determined by Bayard Long.

23. **Antirrhinum Orontium* L. A single specimen on the same gravel-bar with no. 17. Determined by Bayard Long.

24. *Mimulus peduncularis* Dougl. On the sandy shore of Hayden Island. A species of eastern Oregon and Washington. Determined by C. A. Weatherby.

25. **Lobelia Erinus* L. Commonly cultivated in hanging-baskets and window-boxes, and escaping to cultivated ground at Salem.

26. **Iva xanthifolia* Nutt. In a yard on N. Cottage St., Salem. The family recently moved here from Iowa, where the species is an abundant indigenous weed.

27. **Leontodon nudicaulis* (L.) Banks. A single specimen, with no. 23. Has been collected by Peck on sand-dunes along the coast at Netarts, Tillamook Co. Determined by Bayard Long.

28. *Scorzonella procera* (Gray) Greene. In dry open soil in the State Fair Ground, Salem. Piper & Beattie (Fl. N. W. Coast 354) say that "this has been reported from our limits but the specimens seen are immature and doubtful." My specimens were fully mature, and the difference from *S. laciniata* (Hook.) Nutt. was evident at a glance. This genus appears too feebly separable from *Microseris*.

A few more corrections and extensions of range seem required to bring former lists up to date:

1. *Equisetum hyemale* L. var. *robustum* (A. Br.) A. A. Eaton (no. 1 of the list in Torrey's 18: 222. 1918) should according to W. R. Maxon bear the name *E. praealtum* Raf. The specimens from Brooks were probably *E. hyemale* var. *californicum* Milde; but Mr. Maxon determines as *praealtum* specimens collected the past season in gravel-ballast on the railroad-track one mile south of Gerlinger, Polk Co., apparently introduced. This seems the first authentic report of its occurrence in our district.

2. *Salix babylonica* L. (no. 13 of list in Torrey's 18: 223. 1918), which has rested on a single specimen from Polk Co., is well established along a stream at Turner, Marion Co., and there is a single fine specimen marking the site of a former homestead near Waconda in the same county.

3. A *Lupinus* resembling *L. columbianus* Heller that is frequent along the sandy flood-plain of the Santiam for several miles above its confluence with the Willamette is tentatively referred by C. P. Smith to *L. variicolor* Steud., but needs further study.

4. *Cryptantha flaccida* (Dougl.) Greene (no. 45 of list in Torrey 18: 225. 1918) reported from Salem, has also been found in gravel along the railroad-track at Tonquin, Washington Co., appearing as if introduced at both stations.

5. *Cynoglossum officinale* L., reported from Mill City (no. 103 of list in Torrey 18: 29. 1918) is now abundant in low woods and pastures along the Santiam for a distance of 20 miles below Mill City, and threatens to become as troublesome a pest as it is in the Eastern States.

6. *Nicotiana attenuata* Torr., previously reported in these lists only from the shores of the Columbia, was found in gravel in the State Fair Ground at Salem.

7. *Mimulus pilosus* (Benth.) Wats., a species of the interior, reported from west of the Cascades only from Vancouver Island (Fl. N. W. Coast 324) was collected on the sandy shore of the Columbia at Columbia Beach, Multnomah Co.

8. *Bidens frondosa* L. (no. 137 of the list in Torrey 18: 31. 1918) seems to be *B. vulgata* Greene as far as the plant so common along the Willamette at Salem is concerned; but true *B. frondosa* occurs on the shore of the Columbia on Hayden Island, according to the determination by Dr. E. E. Sherff.

9. *Artemisia ludoviciana* Nutt. (no. 85 of the list in Torrey 20: 44. 1920) seems as far as the North Santiam plant is concerned to be *A. Tilesii* Ledeb.; but the Portland plant is true *ludoviciana*.

My sincere thanks are again due to all the botanists named above who have so kindly assisted me in the determination of difficult and unfamiliar specimens. Specimens of most of the above have been deposited either in the Gray Herbarium or that of the Philadelphia Academy of Natural Sciences.

SALEM, OREGON.

SHORTER NOTES

AN UNRECORDED WEED IN BERMUDA

While Professor H. H. Whetzel was studying the plants of Bermuda with especial reference to fungi in 1922, he collected some flowering plants and handed the specimens to Professor L. H. Bailey, who gave me some of them. Among these was a crucifer collected in an onion field in Paget, March 6, 1922, (No.